



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,969	09/06/2001	Randall S. Estep	79493-PCT	6639
24628	7590	10/13/2005	EXAMINER	
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			CHANG, KENT WU	
			ART UNIT	PAPER NUMBER
			2675	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/914,969	Applicant(s) ESTEP, RANDALL S.	
	Examiner Kent Chang	Art Unit 2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.  
2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-18 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hales (US Patent No. 6,360,182) in view of Larson (US Patent No. 6,066,129) and Valley (US Patent No. 5,574,794).

Hales discloses an underwater diving mask for use by a diver in an underwater diving environment, the diving mask comprising: a viewing portion defined by the diver's face and a lens; a visual display device proximate the viewing portion to provide visual images to the diver; a computer system disposed in a portion of the mask and operatively coupled to the visual display device; operation control switches or other types of input devices (114, see column 9 lines 20-24, and Fig.3). Hales is silent in using a sound transducer inside the face mask and speech recognition system for data inputting.

However, Larson teaches using a speech recognition system for data inputting in a head-up display. The device of a Larson includes a speaking chamber configured to sealing engage a portion of the user's mouth to permit the user to speak; a sound

Art Unit: 2675

transducer (inherent from the microphone and the sound to signal converter) located proximal the speaking chamber; the computer system, the viewing portion and the speaking chamber sealing isolated from the outside environment; and the computer system receiving electrical signals produced by the sound transducer and configured to recognize and identify the electrical signals as spoken words of the user, the identified spoken words providing input to the computer; to direct the computer system to provide visual images to the visual display in response thereto to facilitate hands-free operation of the user (see column 14 line 40 to column 15 line 5). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to use a speech recognition system for data inputting (as recited in claims 1 and 6-8) as taught by Larson in the device of Hales so as to provide a fast, easy to operate, and hands-free input device.

Valley further teach to house the sound transducer inside or outside of the face mask for converting voice signal to electronic signal, wherein the face mask having a water-tight speaking chamber configured to sealingly engage a portion of the diver's face including the diver's mouth (see column 1 lines 22-41 and column 3 lines 24-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to house the sound transducer inside or outside of the face mask in the device of Hales as modified so as to clearly convert voice signal to electronic signal as suggested by Valley.

Consider claims 2 and 3. It would have been obvious for one of ordinary skill in the art at the time of the invention that the computer system in the diving mask of Hales

Art Unit: 2675

as modified is operatively coupled to the display device by short length of cabling so that no external cabling extends from the diving mask in a region defined by the diver's head portion to a part of the diver located away from the diver's head, or such that no wiring or tether external to the diving mask is required so that the user is not obstructed by the display and the computer.

Consider claims 4 and 5. It would have been obvious for one of ordinary skill in the art at the time of the invention to use a sound transducer selected from the group consisting of a microphone, crystal microphone, piezoelectric transducer, throat/larynx transducer and vibration transducer; a computer system selected from the group consisting of a computer, microprocessor, RISC processor, single-chip computer, single-board computer, controller, micro-controller and discrete logic computer; a display device selected from the group consisting of a liquid crystal display, LED display, electro-fluorescence display, gas plasma display, prism-type optic display, prismatic projection system and cathode ray tube; a non-volatile storage operatively coupled to the computer system, the non-volatile storage selected from the group consisting of a ROM, PROM, EPROM, flash memory, optical memory, static memory, bubble memory, memory sticks and hard disk memory since it merely depends on the availability of the elements and the system configuration and cost requirement. It would have been obvious for one of ordinary skill in the art at the time of the invention that any of the above elements would perform equally well.

Furthermore, it would have been obvious for one of ordinary skill in the art at the time of the invention to include other well known methods for data inputting and

Art Unit: 2675

computer operation such as menu selection, digital camera control applications, life support applications, general purpose applications, gyroscopic/inertial sensor applications, transmitter and receiver applications and power management applications as recited in claims 9-14 so as to enable the user to perform different task and provide more choices to the user to control the operation of the computer.

Claims 15-18 recite similar limitations as claims 1-14, thus note the rejections above.

### ***Response to Arguments***

3. Applicant's arguments filed 6/7/04 have been fully considered but they are not persuasive.

In response to applicant's argument regarding the limitation of housing the transducer inside the face mask, note that Valley teach that it is known to house a sound transducer inside of the face mask for converting voice signal to electronic signal, wherein the face mask having a speaking chamber configured to sealingly engage a portion of the user's face including the user's mouth (see column 1 lines 22-41 and column 3 lines 24-44, note that Valley clearly pointed out that **it is critical to sealingly house the microphone inside of the mask "without leakage of the surrounding atmosphere into the mask"**).

As to applicant's argument regarding the use of a personal computer, note that the device of Hales includes a microcomputer and data inputting for performing various functions including display control, data acquisition, data or program downloading, etc. It would have been obvious for one of ordinary skill in the art at the time of the invention

Art Unit: 2675

to choose a portable computer to perform any known functions in the device of Hales.

In fact, it has been known in the art that using voice data inputting could have further reduced the size of the computer by eliminating the need of other input devices such as a keyboard, but it would raise the manufacturing cost of the system.

The remainder of the pertinent topics for argument are present in the appropriate rejections above.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### **CONTACT INFORMATION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Chang whose telephone number is 571-272-7667. The examiner can normally be reached on Monday to Thursday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached at 571-272-3638.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**571-273-8300**

Hand-delivered responses should be brought to the Customer Service Window, now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kent Chang  
Primary Examiner  
Art Unit 2675

kc

10/5/05